tetrachloroaurate. The resulting grains were spectrally sensitised at 488 nm using a dye suitable for argon ion laser sensitisation (Dye D). The emulsion was coated on to a clear polyester base material at the following nominal coverages:

Silver 3.9 gm^{-2},

Gelatin 3.1 gm^{-2},

using Compound 1 as the gelatin crosslinking agent. The hardness values as determined by the Dornberg method for coatings of a scanner emulsion containing Compound 1 as the hardening agent, 2 hours at room temperature after coating are reported in the following Table.

Hardener mmol/g gel	Dornberg Number
0.14	25
0.23	48
0.33	89

e) Effect of Compound 1 on Sensitometric Parameters

This example demonstrates that incorporation of Compound 1 into this scanner emulsion has no detrimental effect on sensitometric parameters.

Coatings of a scanner emulsion, prepared as described above, were exposed by a single Xenon flash through a 490 nm narrow band cutoff filter and a 0 - 4.0 continuous tone wedge, and processed through 3M RDC V Rapid Access chemistry. The sensitometric parameters for coatings containing Compound 1, as well as a reference sample crosslinked with formaldehyde, reported in the following Table.

Hardening Agent	Amount mmol/g gel	Dmin	Dmax	SP-1	Conl
HCHO (Comparison)	0.63	0.09	4.27	2.81	2.75
1 (Invention)	0.14	0.10	4.32	2.60	3.71
	0.23	0.07	4.27	2.50	4.25
	0.33	0.05	4.27	2.48	4.11

f) Effect of heat on the hardening activity of Compound 1

Coatings of the same scanner emulsion above were heated at 38°C for 16 hours after coating, and then their hardness values were determined using the Dornberg method. The results reported in the following Table indicate very effective hardening by Compound 1 under these conditions.

Hardener mmol/g gel	Dornberg Number
0.14	220
0.23	360
0.33	>800

g) Evaluation of Compound 1 in a X-Ray Emulsion

A pure silver bromide laminar emulsion of mean aspect ratio 8:1, and mean grain diameter 1.5 micron was prepared by a double-jet precipitation procedure familiar to those skilled in the art, as described in USP 5028521. The resulting emulsion was chemically sensitised with gold thiocyanate and spectrally sensitised to 545 nm, as described in USP 5028521. Samples of this emulsion were coated on to a polyester base material such that the silver coverage was 2.0 gm^{-2}, the gelatin coverage was 1.30 gm^{-2}, and the hardener levels were

as listed in the following Table.

The hardness values were determined after 48 hours at 38°C as by the Dornberg method.

Hardener mmol/g gel	Dornberg Number
0.14	17
0.28	28
0.35	31

h) Effect of Compound 1 on Sensitometric Parameters

This example demonstrates that incorporation of Compound 1 into this X-ray emulsion has no detrimental effect on sensitometric parameters.

Coatings of the X-ray emulsion containing gelatin crosslinked with Compound 1 were exposed by a tungsten filament lamp through a Wrattan 58 filter and 0-4 continuous tone density wedge for 0.1 sec. The samples were then developed in 3M XAD3(TM) chemistry for 25 sec at 34°C, fixed, washed and dried. As a reference material the same coatings containing gelatin crosslinked with bis(vinylsulphonyl)propan-2-o1 were handled in the same way. The results are reported in the following Table.

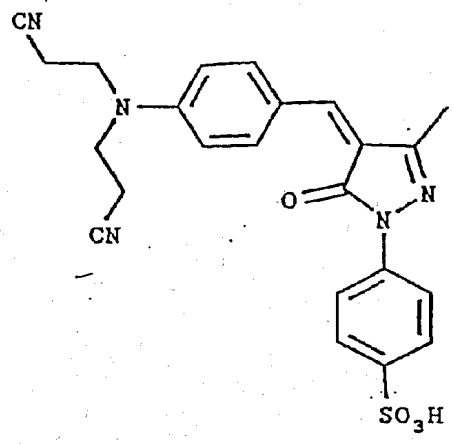
Hardening Agent	Amount mmol/g gel	Dmin	Dmax	SP-1	Con-A*
1,3-bis(vinyl-sulphonyl)propan-2-ol (comparison)	0.14	0.19	2.20	2.30	1.19
1 (Invention)	0.35	0.24	2.04	2.22	1.10

* contrast between 0.13 and 1.0 above fog

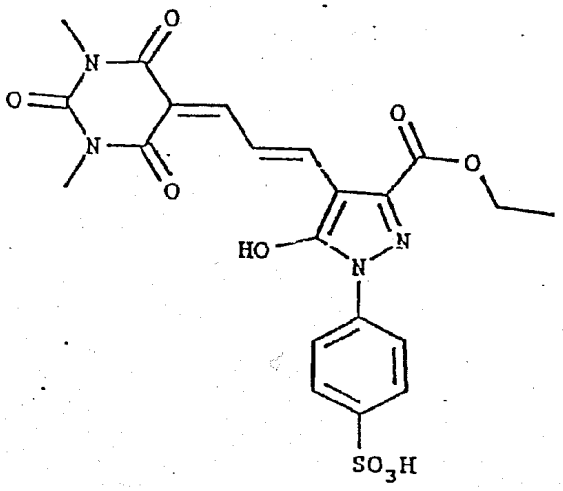
i) Effect of Compound 1 on antihalation Dyes

This example demonstrates that incorporation of Compound 1 into a pan-chromatic antihalation layer does not cause significant bleaching of the antihalation dyes.

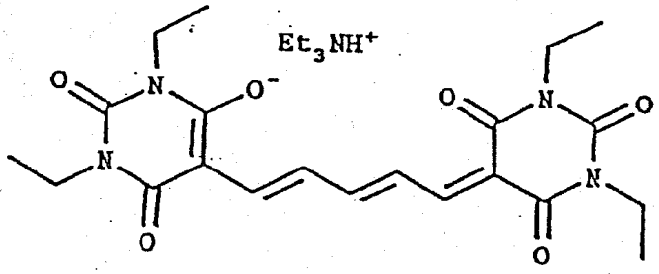
Three different antihalation dyes A, B and c, with the following structures, were coated such that the gelatin coverage was 2.52 gm^{-2}, of which 0.94 gm^{-2} was in the topcoat. The Dornberg number and dye extinctions for coatings containing varying amounts of compound 1 are reported in the following Table.



Dye A



Dye B



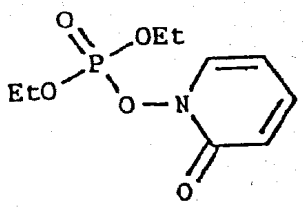
Dye C

Amount of compound 1 mmol/g gel Topcoat With dyes Total			Dornberg Number	Extinction/D		
Topcoat	With dyes	Total		A 440nm	B 490nm	C 595nm
0.08	0.30	0.38	49	0.687	0.786	0.711
0.16	0.30	0.46	55	0.647	0.746	0.682
0.32	0.30	0.62	56	0.617	0.706	0.647

There is only a small difference in values of the dye extinctions with excess of hardener. Of significance is the observation that the hardening activity is not affected by the presence of the dyes.

Example 2

a) Synthesis of compound 2



A solution of N-hydroxy-2-pyridone (11.53 g; 0.104 mol) in dry dichloromethane (200 ml) was treated with triethylamine (14.5 ml, 0.104 mol), followed by diethyl chlorophosphate (10 ml, 69.2 mmol). The mixture was stirred at room temperature for 2 days. After this time no chlorophosphate was present as shown by ^{31}P NMR of the crude reaction mixture. The mixture was diluted with dichloromethane (200 ml) and then poured into water (200 ml). The dichloromethane phase was separated, the resulting solution being washed with saturated aqueous sodium bicarbonate solution (50 ml) before being dried over magnesium sulphate. The magnesium sulphate was removed by filtration, and the combined filtrates were evaporated to leave the product as a yellow oil (15.42 g, 90%).

b) Evaluation of Compound 2 in a Fine-Grained Silver Chlorobromide Emulsion

A fine-grained 0.09 micron, 96% silver chlorobromide emulsion with rhodium doping was prepared and chemically sensitized using a thiosulphate and gold digestion using methods known to those skilled in the art. Samples of this emulsion were coated with a topcoat onto a polyester base material such that the silver coverage was 2.5 gm^{-2}, the total gelatin coverage was 3.8 gm^{-2}, and the hardener levels used and hardness values, which were determined by the Dornberg method both at room temperature 1 hour after coating and after heating at 38°C for 16 hours, are reported in the following Table.

Hardener mmol/g gel	Dornberg Number	
	RT/1hr	38°C/16hr
0.10	52	85
0.30	195	220

Thus Compound 2 shows good hardening activity in this emulsion.

c) Effect of Compound 2 on Sensitometric Parameters

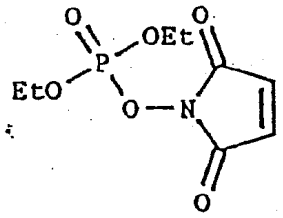
This example demonstrates that incorporation of Compound 2 into the above fine-grained photographic emulsion has no detrimental effect on sensitometric parameters.

Coatings of a fine-grained emulsion, prepared as described above, were exposed on a UV Contacting exposing frame through a 0 - 2.6 continuous tone wedge, and processed through 3M RDC V Rapid Access chemistry. The sensitometric parameters for coatings containing Compound 2, as well as a reference sample cross-linked with formaldehyde, after 16 hours at 38°C are reported in the following Table.

Hardening Agent	Amount mmol/g gel	Dmin	Dmax	SP-I	Conl
HCHO (Comparison)	0.31	0.03	4.83	1.40	8.5
2(Invention)	0.10	0.06	5.01	1.46	9.2
	0.20	0.04	4.67	1.41	9.2
	0.30	0.04	4.58	1.40	9.2

Example 3

a) Synthesis of Compound 3



A solution of N-hydroxymaleimide (5.0 g, 44.2 mmol) in dry dichloromethane (100 ml) was treated with triethylamine (6.2 ml, 44.2 mmol) to form a dark red-brown solution. This was treated with diethyl chlorophosphate (5.8 ml, 40.2 mmol) and the mixture was stirred at room temperature overnight. After this time no chlorophosphate was present as shown by ^{31}P NMR of the crude reaction mixture. The mixture was diluted with dichloromethane (200 ml) and then poured into water (100 ml). The dichloromethane phase was separated, the resulting solution being washed with saturated aqueous sodium bicarbonate solution (50 ml) before being dried over magnesium sulphate. The magnesium sulphate was removed by filtration, and the combined filtrates were evaporated to leave a dark brown oil. The mixture was purified by column chromatography using diethyl ether as eluent to give the product as a pale yellow oil (6.68 g, 67%).

b) Evaluation of Compound 3 in a Fine-Grained Silver Chlorobromide Emulsion

A fine-grained 0.09 micron, 96% silver chlorobromide emulsion with rhodium doping was prepared and chemically sensitized using a thiosulphate and gold digestion using methods known to those skilled in the art. Samples of this emulsion were coated with a topcoat on to a polyester base material such that the silver coverage was 2.5 gm^{-2}, the gelatin coverage was 3.8 gm^{-2}, and the hardener levels used and the obtained hardness values, which were determined by the Dornberg method both at room temperature 1 hour after coating and after heating at 38°C for 16 hours, are reported in the following Table.

Hardener mmol/g gel	Dornberg Number	
	RT/1hr	38°C/16hr
0.10	17	160
0.20	22	210
0.30	25	180

Thus, Compound 3 shows good hardening activity.

c) Effect of Compound 3 on Sensitometric Parameters

This Example demonstrates that incorporation of Compound 3 into the above fine-grained photographic

emulsion has no detrimental effect on sensitometric parameters.

Coatings of a fine-grained emulsion, prepared as described above, were exposed on a UV Contacting exposing frame through a 0 - 2.6 continuous tone wedge, and processed through 3M RDC V Rapid Access chemistry. The sensitometric parameters for coatings containing Compound 3, as well as a reference sample crosslinked with formaldehyde, after 16 hours at 38°C are reported in the following Table.

Hardening Agent	Amount mmol/g gel	Dmin	Dmax	SP-I	Conl
HCHO (Comparison)	0.31	0.03	4.83	1.40	8.5
3(Invention)	0.10	0.04	4.98	1.40	9.3
	0.20	0.03	4.50	1.38	9.5
	0.30	0.03	4.12	1.39	9.0

d) Evaluation of Compound 3 in a Scanner Emulsion

A 0.25 micron cubic chlorobromide emulsion (64% AgCl) was prepared by a conventional double-jet precipitation method familiar to those skilled in the art. The emulsion was doped with iridium and ruthenium metal ions to provide good reciprocity behaviour, and was chemically sensitised with sodium thiosulphate and sodium tetrachloroaurate. The resulting grains were spectrally sensitised at 488 nm using a dye suitable for argon ion laser sensitisation (Dye D). The emulsion was coated with a topcoat on to a clear polyester base material at the following total coverages:

Silver 4.0 gm^{-2},

Gelatin 4.0 gm^{-2},

using Compound 3 as the gelatin crosslinking agent. Hardness values were determined by the Dornberg method both after 1 hour at room temperature and after 16 hours at 38°C and are reported in the following Table.

Hardener mmol/g gel	Dornberg Number	
	RT/1hr	38°C/16hr
0.10	5	85
0.20	25	125
0.30	25	140

e) Effect of Compound 3 on Sensitometric Parameters

This Example demonstrates that incorporation of Compound 3 into the above scanner emulsion has no significant detrimental effect on sensitometric parameters.

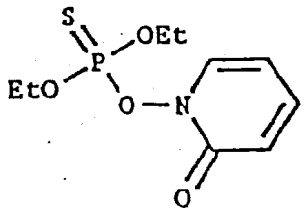
Coatings of a scanner emulsion, prepared as described above, were exposed by a single Xenon flash through a 490 nm narrow band cutoff filter and a 0 - 4.0 continuous tone wedge, and processed through 3M RDC V Rapid Access chemistry. The sensitometric parameters for coatings containing Compound 3, as well as a reference sample crosslinked with formaldehyde, after 16 hours at 38°C are reported in the following Table.

Hardening Agent	Amount mmol/g gel	delta Dmin*	Dmax	SP-1	Con1
HCHO (Comparison)	0.55	0.00	5.00	2.98	3.2
3 (Invention)	0.10	0.08	5.00	3.16	3.4
	0.20	0.03	5.01	3.12	3.3
	0.30	0.15	4.83	3.14	3.2

* delta dmin = observed Dmin - Dmin(HCHO)

Example 4

a) Synthesis of Compound 4



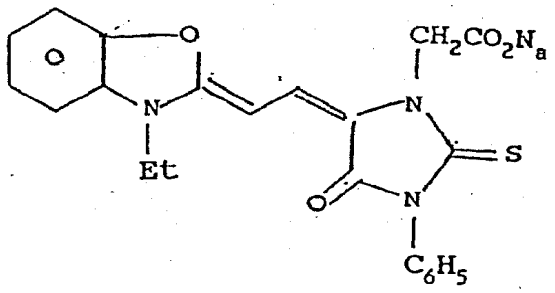
A solution of N-hydroxy-2-pyridone (4.0 g, 36 mmol) in dry dichloromethane (36 ml) was treated with triethylamine (5 ml, 36 mmol), which was added over 5 minutes. This was treated with a solution of diethyl chlorothiophosphate (3.8 ml, 24 mmol) in dichloromethane (4 ml), the residues being washed in with dichloromethane (8 ml), and the mixture was stirred at room temperature overnight. The mixture was diluted with dichloromethane (100 ml) and then poured into water (100 ml). The dichloromethane phase was separated, the resulting solution being dried over magnesium sulphate. The magnesium sulphate was removed by filtration, and the combined filtrates were evaporated to leave the product as a light brown oil (5.85 g, 93%).

b) Evaluation of Compound 4 in a Fine-Grained Silver Chlorobromide Emulsion

A fine-grained 0.09 micron, 96% silver chlorobromide emulsion with rhodium doping was prepared and chemically sensitized using a thiosulphate and gold digestion using methods known to those skilled in the art. Samples of this emulsion were coated on to a polyester base material and the hardener levels and hardness values were determined after 16 hours at 38°C by the Dornberg method are reported in the following Table.

Hardener mmol/g gel	Dornberg Number
0.10	<5
0.20	18

Dye D =



(US 4,336,323)

Example 5

This example demonstrates the utility of the hardeners of the invention in a diffusion transfer printing plate.

A lithographic plate construction of the type disclosed in US Patent No. 4, 361,635 was prepared as follows:-

Antihalation Layer

A 100 micron thick polyester film having a photographic subbing coating on one side to increase adhesion of the photographic layers to the base, was coated with a conventional anti-halation layer consisting of gelatin, silica of 5 micron average grain diameter, carbon black, an anionic surface active agent, hydroquinone and compound (I) as hardener. This composition was coated at 2.9g gelatin per square metre. Compound (I) was used at the level of 0.45m.mol per gram of gelatin, and with the pH adjusted to 5.8.

Photographic Emulsion Layer

A conventional negative-acting cubic, monodispersed silver chlorobromide photographic emulsion containing 64 molar percent silver chloride and 36 molar percent silver bromide with an average grain size of 0.25 microns was prepared by double jetting the silver and halide solutions under controlled pAg. The emulsion was digested with a sulphur sensitiser and sodium tetrachloro-aurate, then sensitised with a conventional red sensitising dye suitable for He-Ne laser address. The pH was adjusted to 5.8 and Compound (I) added at the level of 2.52 m.mol per gram of gelatin before coating the emulsion on top of the antihalation layer at a silver coating weight of 0.7g/m^2.

Receptor Layer

A receptor layer comprising colloidal palladium, Triton X-100 and dialdehyde starch was coated over the photographic emulsion layers to give a palladium metal coating weight of about 1.4 milligrams per square metre. (Triton X-100 is a surfactant available from Rohm & Haas).

Identical samples were stored at room temperature and 38° for 18 hours, and gave Dornberg hardness values of 56 and 50 respectively after immersion in Onyx (TM) developer (available from 3M).

Similar samples were imagewise exposed, processed in Onyx (TM) developer and mounted on an Apollo 21 web press. Both inked up well, and ran cleanly for at least 30,000 impressions.

Example 6

Diffusion transfer printing plates were prepared by the method of Example 5 except that the antihalation layer additionally contained an acrylic latex. Specifically, 20g of a 40% solids by weight dispersion of a butylacrylate/acrylonitrile/methacrylic acid terpolymer (prepared by emulsion polymerisation of the monomers in the weight ratio 54 : 43 : 3) was added to 245g of the coating composition described in Example 5. Two sets of samples were prepared. In samples A, the emulsion was coated at pH 5.8 exactly as described in Example 5, while in samples B the pH was adjusted to 3.5 prior to coating. Both sets were topcoated with the receptor layer of Example 5.

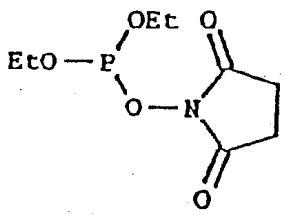
After storage at room temperature for 18 hours, then immersion in Onyx(TM) developer, samples A gave a Dornberg hardness value of 66 and samples B a value of 30. For similar storage at 38°C, the corresponding

values were 74 and 46. Despite their lower Dornberg hardness, samples B ran equally well as samples A on press, printing 30,000 impressions cleanly without sign of wear.

For reasons of stability, especially when developing agents are incorporated in the plate coating, it is preferable to coat the emulsions of diffusion transfer plates at an acidic pH. This Example shows that the hardeners of the invention can be used successfully under these conditions.

Example 7

(a) Synthesis of Compound 7



A solution of N-hydroxysuccinimide (17.5 g, 0.152 mol) in dry THF (350 ml) under nitrogen was treated with triethylamine (21.2 ml), whereupon a colourless precipitate formed. Diethyl chlorophosphite (21 ml, 0.145 mol) was added dropwise and the mixture was heated to reflux for 16 hrs, resulting in the formation of a thick precipitate. The mixture was allowed to cool, and was then filtered and the filtrates were evaporated to leave an oil. This oil was dissolved in chloroform (300 ml), and was washed with saturated aqueous sodium bicarbonate solution (100 ml), the aqueous phase being back-extracted with chloroform (3 x 100 ml). The combined chloroform extracts were dried over magnesium sulphate which was subsequently removed by filtration, and the filtrates were evaporated to leave the product as a golden brown oil (33.0 g, 97 %).

(b) Evaluation of Compound 7 in a Scanner Emulsion

A 0.25um cubic chlorobromide emulsion (64% AgCl) was prepared by a conventional double-jet precipitation as in Example 1(d). The emulsion was coated on to a clear polyester base material at the following nominal coverages:

Silver 4.00 g/m^2
Gelatin 4.26 g/m^2

using Compound 7 as the gelatin crosslinking agent. The hardness values as determined by the Dornberg method immediately after coating, and after various periods of incubation at ambient temperature and at 38°C, are given in the Tables below.

Hardener mmol/g gel	Dornberg number at time after coating			
	3h	6h	21h	72h
0.15	6	20	52	105
0.25	27	37	125	185
0.35	85	125	250	270
0.45	112	145	250	310
0.55	112	150	290	300

Hardener mmol/g gel	Dornberg number with 38°C incubation time				
	1.5h	3h	7h	18h	72h
0.15	56	67	140	200	200
0.25	125	155	275	320	330
0.35	260	290	360	380	400
0.45	250	285	350	400	400
0.55	280	320	390	400	390

Coatings of the above materials were exposed by a single Xenon flash through a 490nm narrow band cutoff filter and a 0 - 4.0 continuous tone wedge, and processed through 3M Rapid Access chemistry. The sensitometric properties for coatings containing Compound 7, with HCHO as a reference, are reported in the following Table:

Hardening Agent	Hardener mmol/g gel	Dmin	Dmax	SP-1	Con1
HCHO	0.41	0.03	5.04	2.52	4.01
Compound 7	0.15	0.03	4.99	2.58	4.31
Compound 7	0.25	0.03	4.99	2.58	4.22
Compound 7	0.35	0.12	4.87	2.81	3.51
Compound 7	0.45	0.05	4.99	2.71	3.62
Compound 7	0.55	0.04	4.99	2.70	3.59

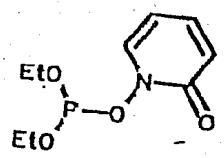
(c) Evaluation of Compound 7 in a X-Ray Emulsion

A pure silver bromide laminar emulsion with a mean aspect ratio of 8:1 and mean grain diameter 1.5μm was prepared as in Example 1(g). Samples of this emulsion were coated onto polyester base such that the silver coverage was 2.0 g/m^2, the gelatin coverage was 2.15 g/m^2, with the levels of Compound 7 hardener as listed in the following Table. The hardness values were determined by the Dornberg method immediately after coating, then after incubation for 16 hours both at ambient temperature and at 38°C. A comparison was made with a sample which was crosslinked with a bis(vinylsulphone).

Hardener mmol/g gel	Dornberg number		
	after coating	16 hours at RT	16 hours at 38°C
0.041	<5	<5	<5
0.043	<5	<5	23
0.077	<5	<5	19
0.107	<5	<5	32
0.132	<5	7.5	27
0.132	<5	12	30
0.132	<5	17	30
0.187	<5	15	50
0.220	<5	19	56
Comparison	<5	23	44

Example 8

Compound 10 was prepared from N-hydroxy-2-pyridone and diethylchlorophosphite in the same manner as Compound 7.



(a) Evaluation of Compound 10 in a Scanner Emulsion

A 0.25μm cubic chlorobromide emulsion (64% AgCl) was prepared by a conventional double-jet precipitation (as Example 1d). The emulsion was coated on to a clear polyester base material at the following nominal coverages:

Silver 4.00 g/m²
Gelatin 4.26 g/m²

using Compound 10 as the gelatin crosslinking agent. The hardness values as determined by the Dornberg method after incubation for a period of 16 hours at 38°C are given in the Table below.

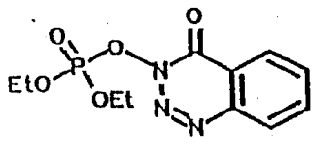
Hardener mmol/g gel	Dornberg number
0.20	8
0.35	11
0.50	36

Coatings of the above materials were exposed by a single Xenon flash through a 490nm narrow band cutoff filter and a 0 - 4.0 continuous tone wedge, and processed through 3M Rapid Access chemistry. The sensitometric properties for coatings containing Compound 10, with HCHO as a reference, are reported in the following Table:

Hardening Agent	Hardener mmol/g gel	Dmin	Dmax	SP-1	Con1
HCHO	0.41	0.03	4.88	2.28	4.83
Compound 10	0.20	0.03	4.85	2.70	3.76
Compound 10	0.35	0.04	4.74	2.78	3.76
Compound 10	0.50	0.07	4.34	2.96	3.35

Example 9

Compound 11 was prepared in analogous manner to Compounds 1 to 3.



(a) Evaluation of Compound 11 in a Scanner Emulsion

A 0.25μm cubic chlorobromide emulsion (64% AgCl) was prepared and coated as Example 1 (d), but Compound 11 was used as the gelatin crosslinking agent. The hardness values as determined by the Dornberg method immediately after coating, and after a period of incubation of 16 hours at 38°C, are given in the Table below.

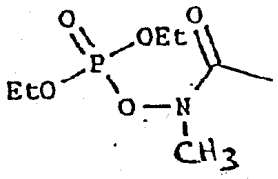
Hardener mmol/g gel	Dornberg number after coating	Dornberg number after incubation
0.20	61	66
0.35	89	90
0.50	102	120

Coatings of the above materials were exposed by a single Xenon flash through a 490nm narrow band cutoff filter and a 0 - 4.0 continuous tone wedge, and processed through 3M Rapid Access chemistry. The sensitometric properties for coatings containing Compound 11 with HCHO as a reference, are reported in the following Table:

Hardening Agent	Hardener mmol/g gel	Dmin	Dmax	SP-1	Con1
HCHO	0.41	0.03	4.73	2.42	4.21
Compound 11	0.20	0.03	4.26	2.40	4.68
Compound 11	0.35	0.04	4.55	2.34	4.87
Compound 11	0.50	0.07	2.97	2.30	3.80

Example 10

Compound 8 was prepared by reaction of N-hydroxy-N-methylacetamide with diethylchlorophosphate.



(a) Evaluation of Compound 8 in a Scanner Emulsion

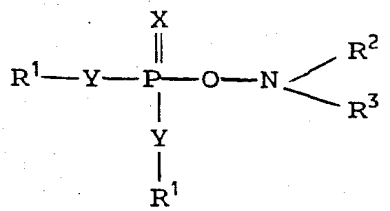
A 0.25μm cubic chlorobromide emulsion (64% AgCl) was prepared and coated as Example 1 (d), but Compound 8 was used as the gelatin crosslinking agent. The hardness values as determined by the Dornberg method after a period of incubation of 16 hours at 38°C are given in the Table below.

Hardener mmol/g gel	Dornberg number
0.20	<0
0.35	0
0.50	8

Although less effective than its cyclic analogues, Compound 8 showed some hardening activity.

Claims

1. The use as a gelatin-hardener of a compound of the formula:



(1)

in which:

X represents O, S or is absent,

each Y independently represents 0, S or a bond,

each R^1 independently represents an aliphatic group of up to 10 carbon atoms or the two R^1 groups together represent the necessary atoms to complete a 5, 6 or 7-membered ring,

$-NR^2R^3$ contains not more than 12 skeletal atoms and

R^2 and R^3 independently represent hydrogen, a cyclic or acyclic group or R^2 and R^3 together represent the necessary atoms to complete a heterocyclic ring.

2. The use as claimed in Claim 1 in which R^1 represents an alkyl group of 1 to 5 carbon atoms.

3. The use as claimed in Claim 1 or Claim 2 in which Y is O.

4. The use as claimed in any preceding Claim in which R^2 and R^3 are selected from hydrogen, alkyl of 1 to 5 carbon atoms and acyl.

5. The use as claimed in one of Claims 1 to 4 in which $-NR^2R^3$ is selected from succinimide, maleimide and 2-pyridone.

6. A method of hardening gelatin which comprises contacting the gelatin with a compound of formula (1) as defined in any one of Claims 1 to 5.

7. A method as claimed in Claim 6 in which the gelatin is incorporated in a photographic silver halide emulsion composition.

8. A method as claimed in Claim 7 in which the compound of formula (1) is incorporated at a level of 0.1 mmol/mol Ag to 1 mol/mol Ag.

9. A method as claimed in Claim 8 in which the compound of formula (1) is incorporated at a level of 10 mmol/mol Ag to 60 mmol/mol Ag.

10. A method as claimed in any one of Claims 6 to 9 in which the compound of formula (1) is incorporated as a 0.1 to 80 w/w% solution in water or alcohol.

11. A photographic element comprising a gelatin layer hardened with a compound of formula (I) as defined in any one of Claims 1 to 5.

12. A photographic element comprising a gelatin layer hardened with a compound of formula (I) as claimed in Claim 11 in which said gelatin layer is a photographic silver halide emulsion layer.

13. A photographic element as claimed in Claim 11 or Claim 12 in the form of a diffusion transfer printing plate.